Extron® Electronics

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User's Guide

RGB 203 Rxi
RGB 203 Rxi VTG

Universal Video Interface with Audio
Universal Video Interface with Audio and mini VTG

68-655-01 **Rev. A**
Printed in the USA
01 03

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Precautions

Safety Instructions • English

This symbol is intended to alert the user of important operating and maintenance (servicing) instructions in the literature provided with the equipment.

This symbol is intended to alert the user of the presence of uninsulated dangerous voltage within the product's enclosure that may present a risk of electric shock.

Caution

Read Instructions • Read and understand all safety and operating instructions before using the equipment.

Retain Instructions • The safety instructions should be kept for future reference.

Follow Warnings • Follow all warnings and instructions marked on the equipment or in the user information.

Avoid Attachments • Do not use tools or attachments that are not recommended by the equipment manufacturer because they may be hazardous.

Consignes de Sécurité • Français

Ce symbole sert à avertir l'utilisateur que la documentation fournie avec le matériel contient des instructions importantes concernant l'exploitation et la maintenance (réparation).

Ce symbole sert à avertir l'utilisateur de la présence dans le boîtier de l'appareil de tensions dangereuses non isolées posant des risques d'électrocution.

Attention

Lire les instructions• Prendre connaissance de toutes les consignes de sécurité et d'exploitation avant d'utiliser le matériel.

Conserver les instructions• Ranger les consignes de sécurité afin de pouvoir les consulter à l'avenir.

Respecter les avertissements • Observer tous les avertissements et consignes marqués sur le matériel ou présentés dans la documentation utilisateur.

Eviter les pièces de fixation • Ne pas utiliser de pièces de fixation ni d'outils non recommandés par le fabricant du matériel car cela risquerait de poser certains dangers.

Sicherheitsanleitungen • Deutsch

Dieses Symbol soll dem Benutzer in der im Lieferumfang enthaltenen Dokumentation besonders wichtige Hinweise zur Bedienung und Wartung (Instandhaltung) geben.

Dieses Symbol soll den Benutzer darauf aufmerksam machen, daß im Inneren des Gehäuses dieses Produktes gefährliche Spannungen, die nicht isoliert sind und die einen elektrischen Schock verursachen können, herrschen.

Achtung

Lesen der Anleitungen • Bevor Sie das Gerät zum ersten Mal verwenden, sollten Sie alle Sicherheits-und Bedienungsanleitungen genau durchlesen und verstehen.

Aufbewahren der Anleitungen • Die Hinweise zur elektrischen Sicherheit des Produktes sollten Sie aufbewahren, damit Sie im Bedarfsfall darauf zurückgreifen können.

Befolgen der Warnhinweise • Befolgen Sie alle Warnhinweise und Anleitungen auf dem Gerät oder in der Benutzerdokumentation.

Keine Zusatzgeräte • Verwenden Sie keine Werkzeuge oder Zusatzgeräte, die nicht ausdrücklich vom Hersteller empfohlen wurden, da diese eine Gefahrenquelle darstellen können.

Instrucciones de seguridad • Español

Este símbolo se utiliza para advertir al usuario sobre instrucciones importantes de operación y mantenimiento (o cambio de partes) que se desean destacar en el contenido de la documentación suministrada con los equipos.

Este símbolo se utiliza para advertir al usuario sobre la presencia de elementos con voltaje peligroso sin protección aislante, que puedan encontrarse dentro de la caja o alojamiento del producto, y que puedan representar riesgo de electrocución.

Precaucion

Leer las instrucciones • Leer y analizar todas las instrucciones de operación y seguridad, antes de usar el equipo.

Conservar las instrucciones • Conservar las instrucciones de seguridad para futura consulta.

Obedecer las advertencias • Todas las advertencias e instrucciones marcadas en el equipo o en la documentación del usuario, deben ser obedecidas.

Evitar el uso de accesorios • No usar herramientas o accesorios que no sean especificamente recomendados por el fabricante, ya que podrian implicar riesgos.

Warning

Power sources • This equipment should be operated only from the power source indicated on the product. This equipment is intended to be used with a main power system with a grounded (neutral) conductor. The third (grounding) pin is a safety feature, do not attempt to bypass or disable it.

Power disconnection • To remove power from the equipment safely, remove all power cords from the rear of the equipment, or the desktop power module (if detachable), or from the power source receptacle (wall plug).

Power cord protection • Power cords should be routed so that they are not likely to be stepped on or pinched by items placed upon or against them.

Servicing • Refer all servicing to qualified service personnel. There are no user-serviceable parts inside. To prevent the risk of shock, do not attempt to service this equipment yourself because opening or removing covers may expose you to dangerous voltage or other hazards.

Slots and openings • If the equipment has slots or holes in the enclosure, these are provided to prevent overheating of sensitive components inside. These openings must never be blocked by other objects.

Lithium battery • There is a danger of explosion if battery is incorrectly replaced. Replace it only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Avertissement

Alimentations• Ne faire fonctionner ce matériel qu'avec la source d'alimentation indiquée sur l'appareil. Ce matériel doit être utilisé avec une alimentation principale comportant un fil de terre (neutre). Le troisième contact (de mise à la terre) constitue un dispositif de sécurité : n'essayez pas de la contourner ni de la désactiver.

Déconnexion de l'alimentation• Pour mettre le matériel hors tension sans danger, déconnectez tous les cordons d'alimentation de l'arrière de l'appareil ou du module d'alimentation de bureau (s'il est amovible) ou encore de la prise secteur.

Protection du cordon d'alimentation • Acheminer les cordons d'alimentation de manière à ce que personne ne risque de marcher dessus et à ce qu'ils ne soient pas écrasés ou pincés par des objets.

Réparation-maintenance • Faire exécuter toutes les interventions de réparation-maintenance par un technicien qualifié. Aucun des éléments internes ne peut être réparé par l'utilisateur. Afin d'éviter tout danger d'électrocution, l'utilisateur ne doit pas essayer de procéder lui-même à ces opérations car l'ouverture ou le retrait des couvercles risquent de l'exposer à de hautes tensions et autres dangers.

Fentes et orifices • Si le boîtier de l'appareil comporte des fentes ou des orifices, ceux-ci servent à empêcher les composants internes sensibles de surchauffer. Ces ouvertures ne doivent jamais être bloquées par des objets.

Lithium Batterie • Il a danger d'explosion s'll y a remplacment incorrect de la batterie. Remplacer uniquement avec une batterie du meme type ou d'un ype equivalent recommande par le constructeur. Mettre au reut les batteries usagees conformement aux instructions du fabricant.

Vorsicht

Stromquellen • Dieses Gerät sollte nur über die auf dem Produkt angegebene Stromquelle betrieben werden. Dieses Gerät wurde für eine Verwendung mit einer Hauptstromleitung mit einem geerdeten (neutralen) Leiter konzipiert. Der dritte Kontakt ist für einen Erdanschluß, und stellt eine Sicherheitsfunktion dar. Diese sollte nicht umgangen oder außer Betrieb gesetzt werden.

Stromunterbrechung • Um das Gerät auf sichere Weise vom Netz zu trennen, sollten Sie alle Netzkabel aus der Rückseite des Gerätes, aus der externen Stomversorgung (falls dies möglich ist) oder aus der Wandsteckdose ziehen.

Schutz des Netzkabels • Netzkabel sollten stets so verlegt werden, daß sie nicht im Weg liegen und niemand darauf treten kann oder Objekte darauf- oder unmittelbar dagegengestellt werden können.

Wartung • Alle Wartungsmaßnahmen sollten nur von qualifiziertem Servicepersonal durchgeführt werden. Die internen Komponenten des Gerätes sind wartungsfrei. Zur Vermeidung eines elektrischen Schocks versuchen Sie in keinem Fall, dieses Gerät selbst öffnen, da beim Entfernen der Abdeckungen die Gefahr eines elektrischen Schlags und/oder andere Gefahren bestehen.

Schlitze und Öffnungen • Wenn das Gerät Schlitze oder Löcher im Gehäuse aufweist, dienen diese zur Vermeidung einer Überhitzung der empfindlichen Teile im Inneren. Diese Öffnungen dürfen niemals von anderen Objekten blockiert werden.

Litium-Batterie • Explosionsgefahr, falls die Batterie nicht richtig ersetzt wird. Ersetzen Sie verbrauchte Batterien nur durch den gleichen oder einen vergleichbaren Batterietyp, der auch vom Hersteller empfohlen wird. Entsorgen Sie verbrauchte Batterien bitte gemäß den Herstelleranweisungen.

Advertencia

Alimentación eléctrica • Este equipo debe conectarse únicamente a la fuente/tipo de alimentación eléctrica indicada en el mismo. La alimentación eléctrica de este equipo debe provenir de un sistema de distribución general con conductor neutro a tierra. La tercera pata (puesta a tierra) es una medida de seguridad, no puentearia ni eliminaria.

Desconexión de alimentación eléctrica • Para desconectar con seguridad la acometida de alimentación eléctrica al equipo, desenchufar todos los cables de alimentación en el panel trasero del equipo, o desenchufar el módulo de alimentación (si fuera independiente), o desenchufar el cable del receptáculo de la pared.

Protección del cables de alimentación • Los cables de alimentación eléctrica se deben instalar en lugares donde no sean pisados ni apretados por objetos que se puedan apoyar sobre ellos.

Reparaciones/mantenimiento • Solicitar siempre los servicios técnicos de personal calificado. En el interior no hay partes a las que el usuario deba acceder. Para evitar riesgo de electrocución, no intentar personalmente la reparación/mantenimiento de este equipo, ya que al abrir o extraer las tapas puede quedar expuesto a voltajes peligrosos u otros riesgos.

Ranuras y aberturas • Si el equipo posee ranuras o orificios en su caja/alojamiento, es para evitar el sobrecalientamiento de componentes internos sensibles. Estas aberturas nunca se deben obstruir con otros objetos.

Batería de litio • Existe riesgo de explosión si esta batería se coloca en la posición incorrecta. Cambiar esta batería únicamente con el mismo tipo (o su equivalente) recomendado por el fabricante. Desachar las baterías usadas siguiendo las instrucciones del fabricante.

FCC Class A Notice

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Note: This unit was tested with shielded cables on the peripheral devices. Shielded cables must be used with the unit to ensure compliance.

Extron's Warranty

Extron Electronics warrants this product against defects in materials and workmanship for a period of three years from the date of purchase. In the event of malfunction during the warranty period attributable directly to faulty workmanship and/or materials, Extron Electronics will, at its option, repair or replace said products or components, to whatever extent it shall deem necessary to restore said product to proper operating condition, provided that it is returned within the warranty period, with proof of purchase and description of malfunction to:

USA, Canada, South America, and Central America:

Extron Electronics
1230 South Lewis Street
Anaheim, CA 92805, USA

Europe, Africa, and the Middle East:

Extron Electronics, Europe
Beeldschermweg 6C
3821 AH Amersfoort
The Netherlands

Asia:

Extron Electronics, Asia
135 Joo Seng Road, #04-01
PM Industrial Bldg.
Singapore 368363

Japan:

Extron Electronics, Japan
Daisan DMJ Bldg. 6F,
3-9-1 Kudan Minami
Chiyoda-ku, Tokyo 102-0074
Japan

This Limited Warranty does not apply if the fault has been caused by misuse, improper handling care, electrical or mechanical abuse, abnormal operating conditions or non-Extron authorized modification to the product.

If it has been determined that the product is defective, please call Extron and ask for an Applications Engineer at (714) 491-1500 (USA), 31.33.453.4040 (Europe), 65.6383.4400 (Asia), or 81.3.3511.7655 (Japan) to receive an RA# (Return Authorization number). This will begin the repair process as quickly as possible.

Units must be returned insured, with shipping charges prepaid. If not insured, you assume the risk of loss or damage during shipment. Returned units must include the serial number and a description of the problem, as well as the name of the person to contact in case there are any questions.

Extron Electronics makes no further warranties either expressed or implied with respect to the product and its quality, performance, merchantability, or fitness for any particular use. In no event will Extron Electronics be liable for direct, indirect, or consequential damages resulting from any defect in this product even if Extron Electronics has been advised of such damage.

Please note that laws vary from state to state and country to country, and that some provisions of this warranty may not apply to you.

Quick Start Guide — RGB 203 R*xi*, RGB 203 R*xi* VTG

Step 1

Turn the equipment off and disconnect the equipment power.

Step 2

For positive or negative output sync (rather than sync following the input), to clamp sync timing to the back porch, or to disable the mini VTG timeout (RGB 203 R*xi* VTG only), open the interface and configure the jumpers and/or DIP switches. See *Internal Configuration*, beginning on page 2-3, for details.

Step 3

Rack, under-desk, or through-desk mount the interface as desired.

Rack — Use the optional 1U Rack Shelf, part #**60-190-01**.

Under-desk — Use the optional Under-Desk Mount Kit, part #**70-077-01**.

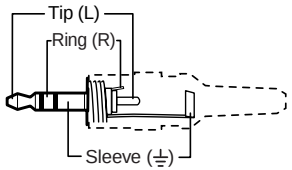
Thru-desk — Use the optional Thru-Desk Mount Kit, part #**70-077-02**.

Step 4

Video inputs — Connect an RGBHV, RGBS, RGsB or RsGsBs video input to each 15-pin HD Input connector as desired.

Step 5

Audio inputs — Connect an unbalanced stereo audio source (such as a computer or a CD player) to each 3.5 mm mini stereo Audio connector for unbalanced audio input as desired. See the figure below to wire the audio plug.



Step 6

Monitor output — If desired, connect a local monitor or other device to this 15-pin HD female connector.

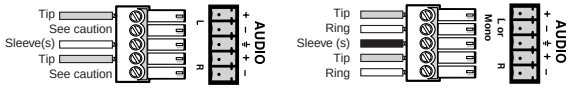
Step 7

Video output — Connect an RGBHV, RGBS, or RGsB video display or other device as shown below.

Quick Start Guide — RGB 203 R*xi*, RGB 203 R*xi* VTG, cont'd

Step 8

Audio output — Connect an audio device to this 3.5 mm, 5-pole captive screw connector for balanced or unbalanced audio output. See below to properly wire the captive screw audio connector.



Unbalanced Output **Balanced Output**

CAUTION *Wiring the audio incorrectly can damage the audio output circuits. Connect the sleeve(s) to ground (GND). Connecting the sleeve(s) to a negative (-) terminal will damage audio output circuits.*

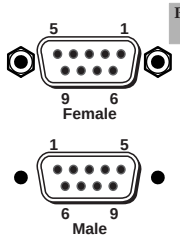
Step 9

DIP switches — Configure the rear panel DIP switches as shown:

Switch		Position	Switch		Position
1	Up	DDSP, no sync processing	5	Up	Monitor ➜ input selection, ID bits 4, 11 grounded
	Down	ADSP		Down	Monitor is tied to in #1, ID bits unterminated
2	Up	RGsB output	6	Up	Mono on left channel
	Down	RGBHV or RGBS output		Down	Stereo audio
3	Up	Serration pulses	7	Up	Autoswitches to highest in# with sync present
	Down	No serration pulses		Down	Autoswitching off
4	Up	Narrow vertical sync pulse	8	Up	LCD backlight off
	Down	Wide vertical sync pulse		Down	LCD backlight on

Step 10

Remote connector — Connect an RS-232 device to this connector for remote control. See chapter 3, *Remote Control*.



Pin	RS-232	Contact closure	Function
1	—	In#1	Input #1
2	TX	—	Transmit data (-)
3	RX	—	Receive data (+)
4	—	In#2	Input #2
5	Gnd	Gnd	Signal ground
6	—	In#3	Input #3
7	—	—	—
8	—	—	—
9	—	—	—

Operation

Level/boost — Alters the picture's brightness.

Peak — Affects the picture's sharpness.

▲▼ — Move the image up and down on the screen.

◄► — Move the image right and left on the screen.

Input selection — Selects among inputs 1, 2, and 3.

NOTE *The interface handles audio on inputs 1 and 2 only. When you select input 3, the audio output is muted.*

203/VTG — Selects the output signal's source (input 1, 2, or 3 or VTG).

VTG rotary switch — Selects display resolution and video test pattern.

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68-655-01 **Rev. A**
Printed in the USA
01 03

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1 Chapter One

Introduction

About this Manual

About the RGB 203 R*xi* and RGB 203 R*xi* VTG

Features

About this Manual

This manual contains information about the Extron RGB 203 R*xi* and RGB 203 R*xi* VTG universal interfaces and on how to operate and configure them.

About the RGB 203 R*xi* and RGB 203 R*xi* VTG

The RGB 203 R*xi* (figure 1-1) is an analog computer-video interface with 300 MHz (-3dB) video bandwidth, Advanced Digital Sync Processing™ (ADSP™), and Digital Sync Validation Processing™ (DSVP™). It accepts three computer-video and two unbalanced computer stereo audio inputs (Input 3 is video only). It also features a local monitor output, an RGBHV, RGBS or RGsB output and a balanced, line level stereo or mono audio output. The interface features horizontal and vertical centering and level boost and peaking. The RGB 203 R*xi* VTG is identical to the RGB 203 R*xi* except that it also contains a built-in video test generator (VTG).

Front panel controls, remote contact closure, autoswitching, or an RS-232 remote control system or computer can be used to select among inputs and to shift the output image horizontally and vertically.

The interfaces are rack-mountable and furniture-mountable and have an internal switching power supply for worldwide power compatibility.

Features

Flexible mounting options — The RGB 203 R*xi* and RGB 203 R*xi* VTG can be rack mounted, mounted under a desk or podium, or mounted through a desk or other furniture with optional mounting kits.

Stereo audio — The interface processes unbalanced PC stereo audio inputs as a line level, balanced stereo or mono audio output.

Level (boost) and peaking controls — Separate front panel controls compensate for signal losses from long cable runs.

Horizontal and vertical centering controls — Separate front panel controls allow separate horizontal and vertical centering adjustments.

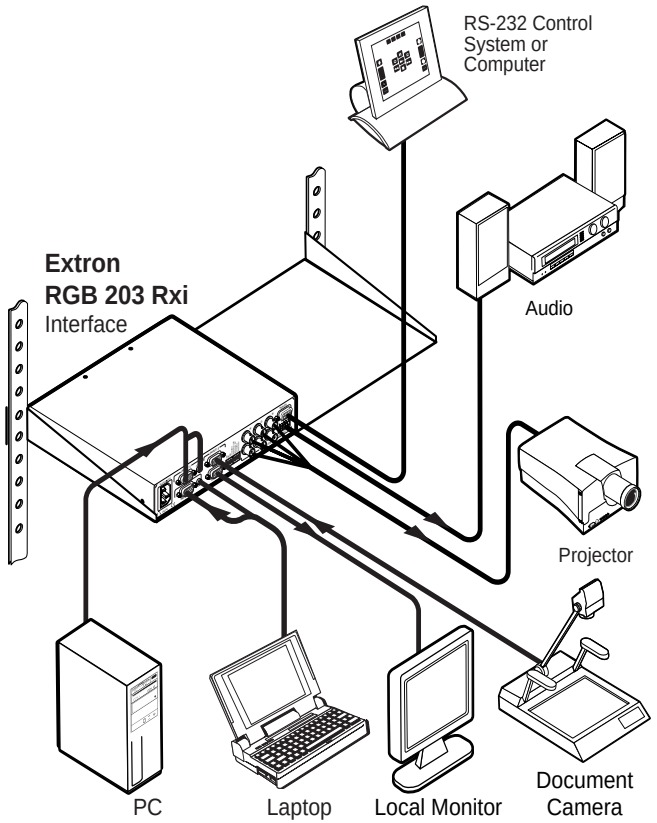


Figure 1-1 — Typical RGB 203 Rxi application

Sync processing — Using regular sync processing to allow centering control (H-shift or V-shift) can create problems with some digital display devices as a result of the sync delay. Extron's ADSP option maintains a stable sync signal while allowing centering control. These interfaces also provide another option, DDSP™ (Digital Display Sync Processing™), to ensure proper displays without altering sync pulse timing or width. The sync processing type is selected via a rear panel DIP switch.

Digital Sync Validation Processing — In critical environments or unmanned, remote locations, it is vital to know which sources are active. Extron's exclusive DSVP confirms that input sources are active by scanning all sync inputs for active signals. DSVP provides instantaneous frequency feedback for composite sync or separate horizontal and vertical sync signals via the interface's Remote port.

Thirty memory presets — Thirty spaces are reserved in the interface's memory for storing user-defined combinations of horizontal and vertical position settings based upon input signal scan rates. The interface automatically recalls the position settings when it detects an input signal with a matching scan rate.

LCD scan rate indicator — This backlit liquid crystal display (LCD) indicates the horizontal and vertical sync rates, and the minimum and maximum centering limits. A DIP switch is provided for turning off the backlight.

RGBHV, RGBS, or RGsB outputs — Select the output format via cabling setup and rear panel DIP switch.

Serration pulse switch — This DIP switch-selectable feature adds or strips the serration pulses from the output signal to make it compatible with digital display devices. Use the serration pulse switch if flagging or bending occurs at the top of the video display.

Sync polarity adjustment — Horizontal and vertical sync output can either follow input sync polarity, or outgoing sync can be forced to positive or negative via an internal jumper.

Vertical sync pulse width adjustment — Vertical sync pulse width can be adjusted via a rear panel DIP switch.

Remote control input selection — Connect a remote contact closure keypad, an RS-232 control system, or a computer to the rear panel Remote port to remotely control the interface.

Executive mode — Locks out front panel control of horizontal and vertical shift and input selection (with the exception of VTG mode).

Vented metal enclosure — Vents in the enclosure keep the interface cool and ready for use 24 hours a day, 7 days per week.

Automatic sync stripping — Sync signals are automatically stripped from the red, green, and blue video input signals. The interfaces normally output sync simultaneously as separate horizontal and vertical sync and as composite sync, but sync on green (SOG) can be selected via a rear panel DIP switch.

Video test generator (RGB 203 R*xi* VTG only) — The VTG version of the RGB 203 R*xi* includes a 4-resolution (VGA, SVGA, XGA, and SGI), 4-pattern video test generator to simplify system setup and testing.

Chapter Two

Installation and Operation

Installation Overview

Internal Configuration

Mounting the Interface

Rear Panel Connections and Switches

Operation

Troubleshooting

Installation Overview

This is an overview of the installation process. You will find detailed installation and operation instructions in this chapter.

To install and set up the RGB 203 R*xi* and RGB 203 R*xi* VTG interfaces, follow these basic steps:

1. Turn all of the equipment (computers, remote controls, interface, projector/monitor, local monitor, and speakers or other audio device) off. Disconnect the power cords from the power source.

NOTE *Sync polarity, video clamp, and VTG timer configuration require opening the interface's case and should be done before the interface is mounted.*

2. If you want the interface to always output positive sync or negative sync, rather than following the input sync polarity, open the interface and shift internal jumpers as necessary. See *Internal Configuration* and its subsection, *Sync polarity jumpers*, in this chapter.

3. If you want to clamp the sync timing of the video output to the sync tip rather than the back porch, open the interface and shift an internal jumper. See *Internal Configuration* and its subsection, *Video clamping jumper*, in this chapter.

4. **RGB 203 R*xi* VTG only**, if you want the built-in mini VTG to continuously output the selected test pattern rather than time out after 5 minutes, remove an internal jumper. See *Internal Configuration* and its subsection, *VTG timeout (RGB 203 Rxi VTG only)*, in this chapter.

5. Install the rubber feet for tabletop use, or install the appropriate brackets and furniture or rack mount the interface. See *Mounting the Interface* in this chapter.

6. Connect the inputs (computers), output (display, local monitor, and audio), and remote control. See *Rear Panel Connections and Switches* in this chapter.

7. Set the rear panel DIP switches. See *Rear Panel Connections and Switches* in this chapter as a guide.

8. Connect power cords and turn on the devices: output devices (projector, monitors, speakers), remote control device, interface, and source computers.

9. Adjust horizontal and vertical centering, and adjust the level and peaking to obtain the best picture.

10. For the RGB 203 R*xi* VTG, set up and test the VTG. See *Operating the VTG* in this chapter.

Internal Configuration

The interface is factory configured to output RGBHV or RGBS video whose sync follows the input and that is clamped to the back porch. The interface can be configured to output positive or negative sync or to clamp on the sync tip. The timeout functions of VTG models can be turned off. All of these reconfigurations require opening the interface's case.

1. Remove the three screws on each side and the two screws on top of the cover (figure 2-1).

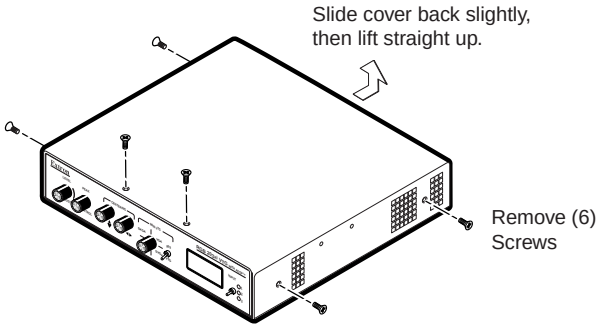


Figure 2-1 — Opening the interface

2. Lift the cover off.
3. Configure the interface as desired. See *Sync polarity jumpers*, *Video clamping jumper*, and *VTG timeout (RGB 203 Rxi VTG only)* in this chapter. Figure 2-2 shows the location of all of the user-serviceable components.
4. Replace the cover and reinstall the screws.

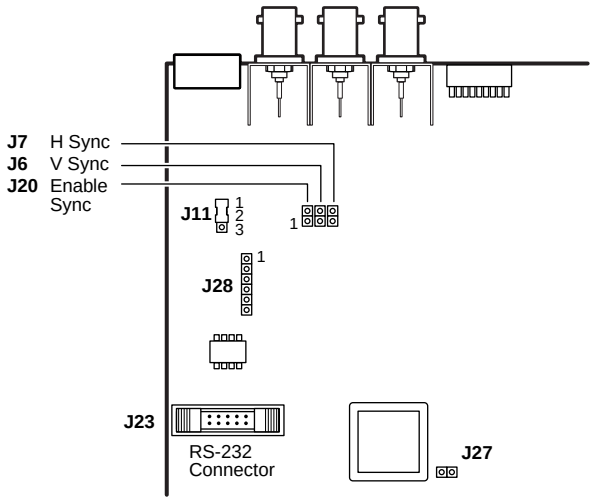


Figure 2-2 — Jumper locations

Sync polarity jumpers

The interface is factory configured for the output sync to follow the input sync. To force positive or negative sync, reconfigure the jumper as follows:

1. Locate jumper blocks J6, J7, and J20 on the printed circuit board.
2. **For sync follow (output sync polarity identical to the input sync)**, ensure that the jumper is removed from jumper block J20.
3. **For positive or negative sync**, ensure that a jumper is installed in jumper block J20 and configure J6 and J7 as follows:
   a. **Vertical sync** —

      For positive sync, ensure that a jumper is installed in jumper block J6.

      For negative sync, ensure that the jumper is removed from jumper block J6.

   b. **Horizontal sync** —

      For positive sync, ensure that a jumper is installed in jumper block J7.

      For negative sync, ensure that the jumper is removed from jumper block J7.

Video clamping jumper

The interface is factory configured to clamp the sync timing to the back porch. To clamp the sync timing to the tip of the sync pulse, reconfigure the jumper as follows:

1. Locate J11 on the printed circuit board.
2. **For sync timing clamped to the back porch**, ensure that a jumper is in place from pin 1 to pin 2.
3. **For sync timing clamped to the sync tip**, ensure that a jumper is in place from pin 2 to pin 3.

VTG timeout (RGB 203 R*xi* VTG only)

The built-in mini VTG is factory configured to output the selected test pattern for 5 minutes. After the VTG times out, the screen dims, but is still visible. The output remains dim until you operate any of the front panel controls, resetting the timer and outputting the VTG test pattern at full intensity.

Disable the VTG timer, causing the mini VTG to continuously output the selected test pattern at full intensity until you turn off the VTG portion of the interface as follows:

1. Locate DIP switch J27 on the printed circuit board.
2. Remove the jumper from J27.

Mounting the Interface

Select an installation option: tabletop placement, or under-desk, through-desk or rack mounting. Follow the appropriate procedure on the next three pages.

Tabletop placement

For tabletop or desktop placement only, install the self-adhesive rubber feet/pads (provided) onto the four corners of the bottom of the interface enclosure.

Under-desk mounting

1. Secure the optional under-desk mounting brackets (part #**70-077-01**) to the interface with the six machine screws provided in the mounting kit (figure 2-3).

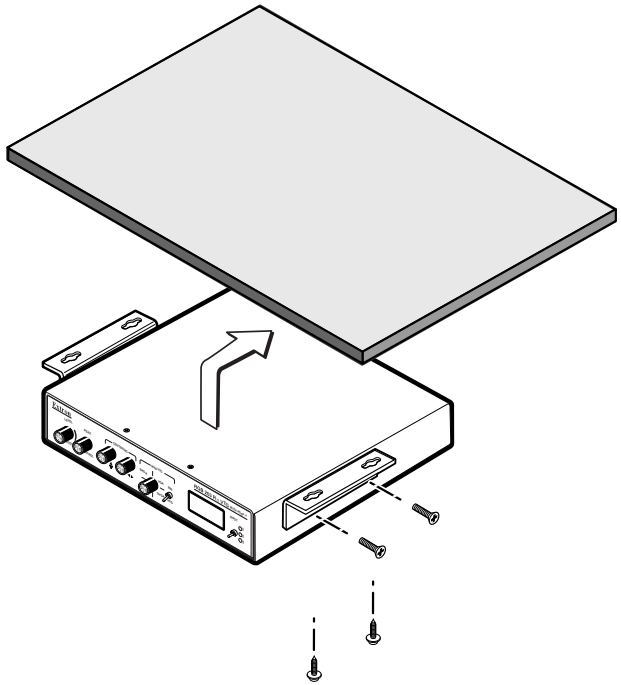


Figure 2-3 — Under-desk mounting

2. Hold the interface with attached brackets against the underside of the desk or other furniture. Mark the location of holes for screws on the desk.
3. Drill 1/4" (6.4 mm) deep, 3/32" (2 mm) diameter pilot holes in the table or desk at the marked screw locations from the underside/inside (concealed side) of the furniture, where the interface will be located.
4. Insert the four wood screws into the pilot holes. Fasten each screw into the installation surface until just less than 1/4" of the screw protrudes.
5. Align the installed screws with the slots in the mounting brackets, and place the interface against the surface, with the screws through the bracket slots.
6. Slide the interface slightly forward or back, then tighten all four screws to fasten it in place.

Through-desk mounting

1. If rubber feet were installed on the interface, remove them.
2. Insert the machine screws provided in the optional mounting kit (part #**70-077-02**) through the slots in the through-desk mounting brackets, and loosely secure the brackets to the interface (figure 2-4).

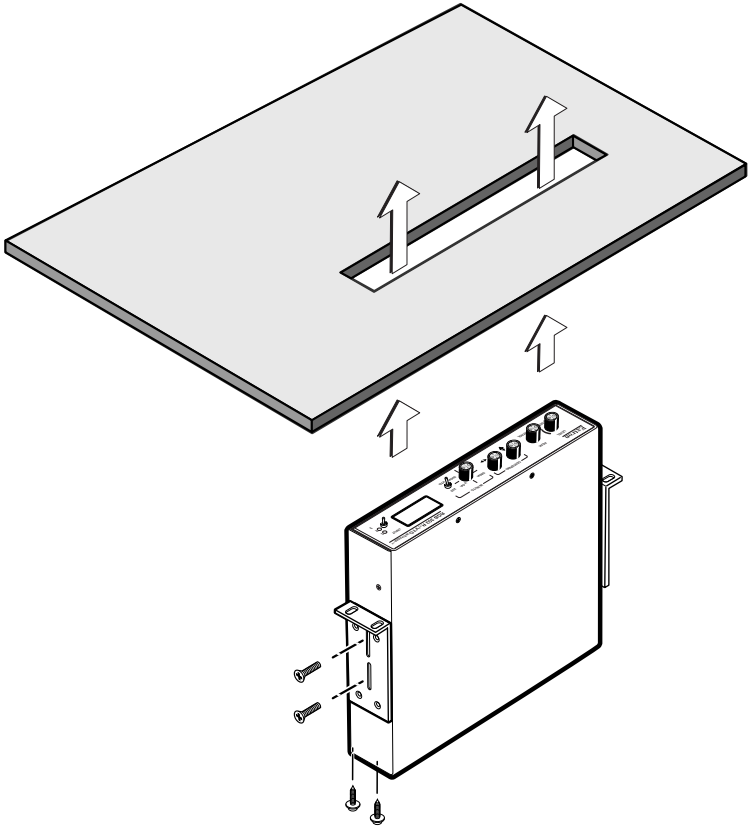


Figure 2-4 — Through-desk mounting

3. Hold the interface with attached brackets against the underside of the desk/table. With a soft pencil mark the location of holes for screws on the desk. Mark the opening, approximately 1.8" x 8.9" (4.6 cm x 22.6 cm).
4. Cut out the material from the installation area with a jigsaw. Check the opening size by inserting the interface part way through the hole. If needed, use a saw, file or sandpaper to enlarge the hole. Smooth the edges of the hole with sandpaper.

5. Drill 1/4" (6.4 mm) deep, 3/32" (2 mm) diameter pilot holes in the desk or table at the marked screw locations. The holes should be drilled from the underside or inside (concealed side) of the furniture, where the interface will be located.
6. Secure the interface to the desk with the provided wood screws.
7. To adjust the height of the interface within the desk, slide the interface up or down to the desired position, then tighten the screws that attach the brackets to the interface.

Rack mounting

1. If feet were installed on the bottom of the interface, remove them.
2. Place the interface on one half of the 1U (one unit high, 19" wide) optional rack shelf (part **#60-190-01**). Align the front of the interface with the front of the shelf, and align the threaded holes on the bottom of the interface with the holes in the rack shelf (figure 2-5).
3. Secure the interface to the rack shelf with the two provided 4-40 x 3/16" machine screws. Insert the screws from the underside of the shelf and securely fasten them through diagonally opposite corners as shown in figure 2-5.
4. Fasten the false front panel (provided with the rack shelf) to the unoccupied side of the rack (figure 2-5), or install a second half-rack-width device in that side by repeating steps 1 through 3.
5. Secure the rack shelf to the rack using four 10-32 x ¾" bolts. Insert the bolts through #10 beveled washers, then through the holes in the rack ears.

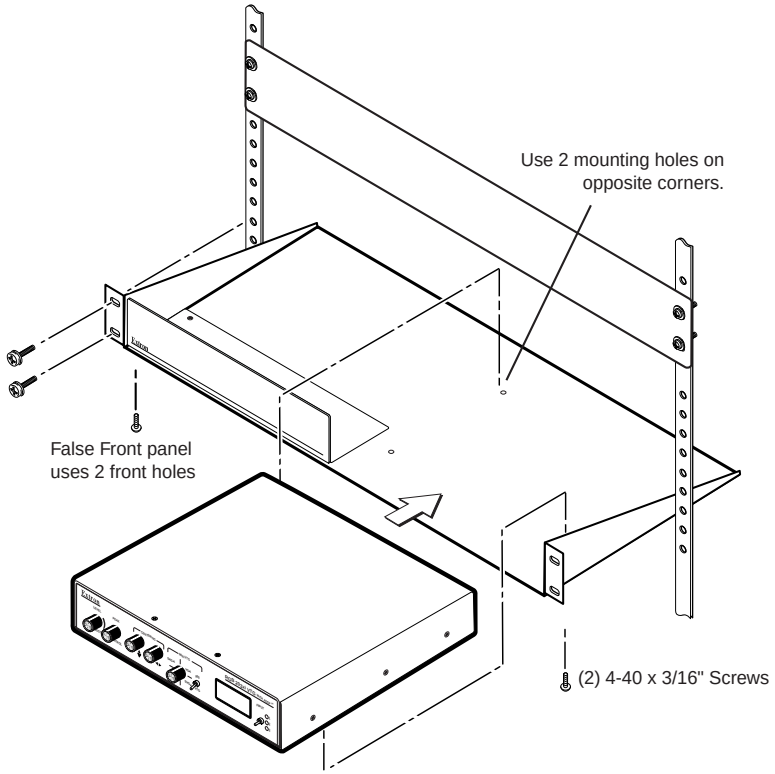


Figure 2-5 — Rack mounting

Rear Panel Connections and Switches

Figure 2-6 shows the rear panel of the RGB 203 R*xi*. The features described in this section apply to both models.

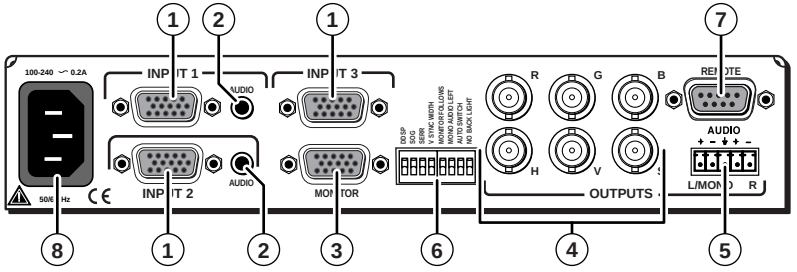


Figure 2-6 — RGB 203 Rxi rear panel features

(1) **Inputs 1, 2, and 3** — Connect the analog computer-video sources to these 15-pin HD female connectors.

NOTE *Most laptop or notebook computers have an external video port, but they require special commands to output the video to that connector. Also, a laptop's screen shuts off once that port is activated. See the computer's user's guide for details, or contact Extron for a list of laptop keyboard commands.*

(2) **Audio inputs 1 and 2** — Connect the unbalanced stereo audio sources (such as the computers or a CD player) to these 3.5 mm mini stereo jacks for unbalanced audio input. Figure 2-7 shows how to wire the audio jack.

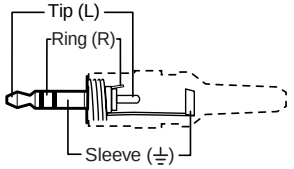


Figure 2-7 — Audio input connector wiring

(3) **Monitor connector** — If desired, connect a local monitor or other device to this 15-pin HD female connector.

(4) **BNC output connectors** — Connect a coaxial cable between the display (projector or monitor) and these rear panel BNC connectors.

RGBHV

For RGBHV (**separate H and V sync**) output, connect the cables to five BNCs.

RGBS

For RGBS (**composite sync**), connect the cables to four BNCs.

RGsB

For RGsB **(sync on green,** SOG), connect the cables to three BNCs. Also select the SOG option on the rear panel DIP switch (see item (6), *Dip switches* in this chapter.

(5) **Audio output connector** — Connect an audio device, such as powered speakers, to this 3.5 mm, 5-pole captive screw connector for balanced or unbalanced audio output.

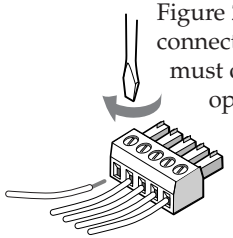


Figure 2-8 shows how to wire the captive screw audio connector. The connector is included with the interface, but you must obtain the cable. Insert the wires into the appropriate openings in the captive screw connector. Tighten the screws on top to fasten the wires.

CAUTION *Wiring the audio incorrectly can damage the audio output circuits.*

Connect the sleeve(s) to ground (GND). Connecting the sleeve(s) to a negative (-) terminal will damage audio output circuits.

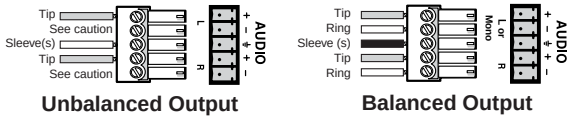
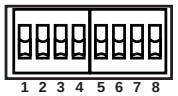


Figure 2-8 — Wiring the audio output connector

(6) **DIP switches** — This bank of DIP switches is used to configure the interface. The switches control:



- DDSP or ADSP
- SOG (sync on green)
- Serration pulses
- Vertical sync pulse width
- Monitor follows
- Mono audio left
- Auto-switching
- Backlight illumination.

NOTE *The default for all DIP switches* ***is Off (down).***

1 — DDSP

DDSP disables all sync processing. This feature may be necessary for digital display devices such as LCD, DLP (digital light processor), and plasma displays. Use this option if the image is not displayed properly after other options, such as serration pulse and video termination changes, have been tried.

On — The interface uses DDSP instead of ADSP. DDSP does not process the sync signal.

NOTE *DDSP disables the horizontal and vertical centering controls.*

Off — The interface performs sync processing operations, such as centering, with ADSP.

2 — Sync on green

On — The interface outputs a composite sync signal on top of the green video signal (SOG) via the G output connector (RGsB).

Off — The interface outputs separate horizontal and vertical sync (on the H and V connectors) and composite sync (on the S connector) for RGBHV or RGBS.

3 — Serration pulses — Many LCD and DLP projectors and plasma displays will not display properly if serration pulses are present in the sync signal. Flagging or bending at the top of the video image is a sign that the serration pulses should be removed.

On — The interface outputs serration pulses in the vertical sync interval.

Off — The interface does not output serration pulses.

4 — Vertical sync pulse width — For some digital displays, if:

- no picture appears
- the picture cuts in and out
- the picture is scrambled

try adjusting the output vertical sync pulse width or switching from ADSP to DDSP.

On — The vertical sync pulse is narrow.

Off — The vertical sync pulse is wide.

5 — Local monitor and ID bit termination — This switch controls the input assigned to the local monitor output and ID bit termination.

On — The local monitor connector follows the input selection and ID bits 4 and 11 are tied to ground.

Off — The local monitor output connector is locked to input 1 and ID bits 4 and 11 are unterminated.

6 — Monaural audio output

On — Mono audio is output in the left channel only.

Off — Normal stereo output.

7 — Auto switch

On — The interface automatically switches to the highest numbered input with sync present.

Off — Manual switch mode.

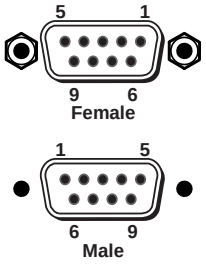
NOTE *Auto switch works for RGBHV and RGBS video inputs only. Auto switch does not work for RGsB video input.*

8 — No LCD backlight — This switch controls illumination of the LCD backlight.

On — The LCD backlight is off, except for three seconds at power-up.

Off — The LCD backlight is on while a signal is present at the selected input.

(7) **Remote connector** — Connect an RS-232 device (control system or PC computer) for remote switching between inputs and remote centering control to this DB 9 female connector (figure 2-9). Software for RS-232 control is included with the interface. See chapter 3, *Remote Control* for details.



Pin	RS-232	Contact closure	Function
1	—	In#1	Input #1
2	TX	—	Transmit data (-)
3	RX	—	Receive data (+)
4	—	In#2	Input #2
5	Gnd	Gnd	Signal ground
6	—	In#3	Input #3
7	—	—	—
8	—	—	—
9	—	—	—

Figure 2-9 — Remote connector pin assignments

Connect a contact closure remote control device to this 9-pin D female connector for remote switching between inputs.

(8) **AC power connector** — Connect a standard IEC AC power cord here for power input (100VAC to 240VAC, 50/60 Hz) to the internal, autoswitching power supply.

Operation

Connect power cords and turn on the display and audio output devices (projectors, monitors, speakers), interface, and input devices (computers). The system is ready for operation.

Select an input using the front panel toggle switch or the remote control (keypad, system, or PC). The image should now appear on screen and sound should be audible. If not, ensure that all devices are plugged in and receiving power. Check the cabling and switch settings, and make adjustments as needed. Select a different input (or the VTG) to check for a picture and sound.

If problems persist, see *Troubleshooting* in this chapter. If the troubleshooting tips do not help, call the Extron S^3 Sales & Technical Support Hotline.

Front panel controls and indicators

Figure 2-10 shows the front panel of the RGB 203 R*xi* VTG. The features described in this section apply to both models unless otherwise noted in the description and by an asterisk (*) in the callout number.

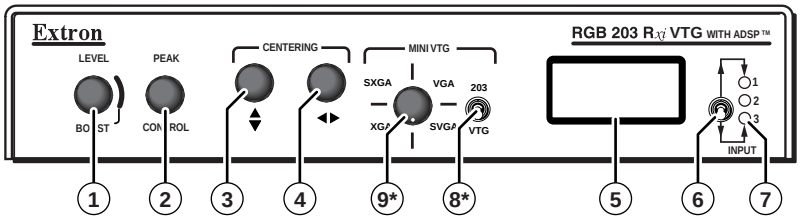
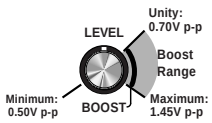


Figure 2-10 — RGB 203 Rxi VTG front panel

Level and peaking controls

(1) **Level/boost control** — The Level/boost control alters the video output voltage to affect the brightness of the displayed image. Adjust the knob while viewing the displayed image to set the level/boost that provides the best picture quality.



If the interface receives a typical (0.7 volts p-p) analog computer video input, the output is as follows:

- At the minimum level setting (the counterclockwise limit of this control), the interface outputs video at 0.5 volts p-p.
- Unity level is 0.7 volts p-p, the same as the input signal. Set the control to just before the boost range (indicated by the red line on the interface, the shaded area on the illustration to the left) to output unity level video.
- At the maximum level setting (the clockwise limit of this control), the interface outputs video at 1.45 volts p-p.

  Select a setting in the boost range (0.7 volts and above), to compensate for the decrease in signal level that occurs when the signal passes through long cables.

  Set the boost at 100% (the maximum level) for cable lengths over 500 feet for all computer signals of 15 kHz to 150 kHz.

(2) **Peaking (Peak) control** — Peaking affects the sharpness of a picture. Increased peaking can compensate for detail (mid- and high-frequency) loss from low bandwidth system components or capacitance in long cables. The minimum setting (at the counterclockwise limit) provides no peaking. The maximum setting (at the clockwise limit) provides 100% peaking. Adjust this control while viewing the displayed image to obtain the optimum picture sharpness.

Centering controls

Many projectors store centering information in their own memories based on signal frequency. When a projector displays video from different input sources that have the same frequency, one source's images may not be centered. Using the interface's centering controls eliminates that problem.

(3) **Vertical centering (↕)** — While viewing the displayed image, rotate this control to move the image up or down on the screen. During centering adjustment, the LCD displays V-SHIFT, and it indicates the vertical shift minimum or maximum limit when the centering limit has been reached. See the notes below item (4).

(4) **Horizontal centering (↔)** — While viewing the displayed image, rotate this control to move the image to the right or left on the screen. During centering adjustment, the LCD displays H-SHIFT, and it indicates the horizontal shift minimum or maximum limit when the centering limit has been reached.

NOTE *DDSP disables the interface's vertical and horizontal centering controls. If DIP switch 1 (DDSP) is set to On and either centering control is rotated, the LCD displays N/A DDSP ON.*

To use the display's centering controls rather than the interface's controls, set the DDSP DIP switch to On.

NOTE *Executive mode (see* Executive mode *in this chapter) disables the interface's vertical and horizontal centering controls. If executive mode is on and either centering control is rotated, the LCD displays EXEC MODE ON.*

NOTE *The centering controls have no mechanical limits to rotation. When the minimum or maximum limit of the control is reached, LCD indicates the horizontal or vertical shift limit has been reached and the picture stops moving on the screen.*

Centering memory

Turning the centering control knobs not only moves the images, but it also stores the horizontal and vertical centering settings in separate memories for each selected input. The interface recalls the centering settings each time an input is selected. Centering adjustments only need to be set once for an application because the settings are saved even when the power is off.

LCD display

(5) **LCD display** — The LCD serves two main functions: to display the horizontal and vertical scanning rates of the input signal, and to indicate the horizontal and vertical centering status and limits. During VTG operation (RGB 203 R*xi* VTG only), the LCD displays the VTG format, resolution, and refresh rates.

LCD screen backlight

The LCD backlights for 15 seconds at power-up, and it remains backlit as long as an input signal is present at the selected input. To force the backlight to remain off at all times except at power-up, set DIP switch 8 (No Backlight) on the rear panel to On (up).

Scan rate indication

When the interface is powered on, the LCD lights for 15 seconds while it determines whether an input sync signal is present. If DIP switch 8 is set to On (up), the LCD lights for three seconds only.

- If the interface does not detect an input sync signal, the LCD goes dark and displays NO SIGNAL until the interface receives an active sync signal.
- If the interface detects an input sync signal, the LCD displays the horizontal and vertical scan rates (sync frequencies) in the following format:

  Hxxx.xxk
  Vxxx.xHz

  The first line shows the horizontal rate in kilohertz, and the second line shows the vertical rate in Hertz.

Centering indications

While the vertical (▲▼) or horizontal (◀▶) centering (shift) controls are being adjusted, the LCD displays H-SHIFT or V-SHIFT. That message remains on the LCD (in place of the scan rates) until the centering control has been inactive for 3 seconds. When a centering control reaches its minimum or maximum limit, the LCD displays MIN or MAX on the line below H-SHIFT or V-SHIFT.

Once the centering controls are no longer active, the centering settings are saved, and the LCD displays the current scan rates.

If DIP switch 1 (DDSP) on the rear panel is set to On (up) and a centering control is rotated, the LCD displays N/A DDSP ON, and the image does not shift on screen.

VTG indications

When the VTG function is active (RGB 203 R*xi* VTG only), the LCD displays the current format, resolution, and scan rate settings.

Input selection

(6) **Input selection switch** — The Input selection toggle switch selects among inputs 1, 2, and 3 (figure 2-11). Each time you move the switch down, the interface switches to the next lower input (in the order that the inputs are listed on the front panel): input 1 —> input 2, input 2 —> input 3, input 3 —> input 1. Moving the switch up selects the next higher input (in the order that the inputs are listed on the front panel). The switch returns to the center position automatically.

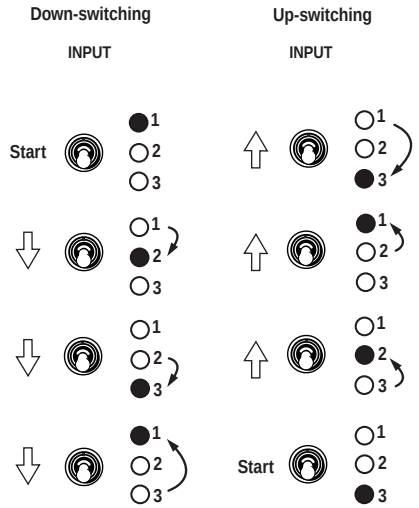


Figure 2-11 — Switching among inputs

A remote RS-232 control system or computer or a contact closure switch, connected via the rear panel Remote port, can also switch among the inputs.

NOTE *Executive mode (see* Executive mode *in this chapter) disables the Input selection switch. If executive mode is on and the Input selection switch is operated, the LCD displays EXEC MODE ON.*

NOTE *The interface handles audio on inputs 1 and 2 only. When you select input 3, the audio output is muted.*

(7) **Input LED** — The lit LED indicates the selected input.

VTG controls (RGB 203 Rxi VTG only)

The RGB 203 R*xi* VTG includes a limited video test generator. The VTG creates and outputs standard test patterns at fixed formats and resolutions so that a system can be set up and tested even when an input computer is not available.

(8*) **203 (interface)/VTG selection switch** — Use this switch to select the output signal's source:

203 — The interface outputs the selected input (from input 1, 2, or 3) for display.

VTG — The interface outputs a test pattern generated by the VTG for display.

NOTE *When this switch is set to VTG, signals from input 1, 2, and 3 are ignored; the interface's internal VTG provides a test pattern in place of the computer video input. Input selection cannot be performed until the 203/VTG selection switch is set to 203.*

(9*) **VTG output resolution and pattern selection switch** — Select a combination of display resolution and video test pattern using this 16-position rotary switch. Four different video test patterns (figure 2-12) are available for each of the four resolutions offered by the RGB 203 R*xi* VTG's built-in mini video test generator.

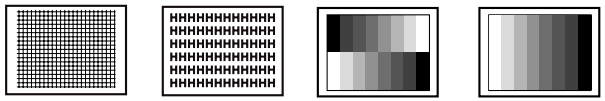


Figure 2-12 — Mini VTG test patterns

Operating the VTG

Operate the VTG as follows:

1. Set the front panel 203/VTG selection switch to VTG.
2. Select an appropriate combination of output resolution and test pattern using the 16-position rotary switch on the front panel. Four different video test patterns are available for each of the four resolutions. Select the test patterns by rotating the switch within the appropriate resolution quadrant. The LCD displays the selected VTG format, the resolution, and then the scan rates.

   The table below shows the four available resolutions:

Switch quadrant	Format	Resolution (pixels x lines)	H. rate (khz)	V. rate (Hz)
1	VGA (VGA 3)	640 x 480	31.5	60
2	SVGA	800 x 600	37.9	60
3	XGA (VESA 3)	1024 x 768	48.4	60
4	SXGA (SGI)	1280 x 1024	64.0	60

Executive mode (front panel security lockout)

The executive mode limits the operation of the interface from the front panel. When the interface is in executive mode, the front panel Vertical centering (↕), Horizontal centering (↔), and Input selection functions are disabled.

To toggle executive mode on or off, hold down the Input selection switch for approximately five seconds. The LCD displays EXEC MODE ON to indicate the mode change. Release the switch. To toggle the executive mode off, hold down the Input selection switch again until the LCD displays EXEC MODE OFF.

Troubleshooting

Turn on the input devices (computer, audio device) and output device(s) (projector, monitors, speakers). The image should now appear on the screen, and sound should be audible.

If the image does not appear or there is no sound

1. Ensure that all devices are plugged in.
2. Make sure that each device is receiving power. The interface's front panel LCD lights if the interface is receiving power and an active sync signal.

3. Check the cabling and the audio connector wiring and grounding, and make adjustments as needed.
4. For digital display devices (including LCD, DLP and plasma devices), try turning DIP switch 1 (DDSP) On (up) or Off (down) on the rear panel.
5. To test the system setup and output, substitute a video test generator for one of the computer inputs. Use the VTG that is built into the RGB 203 R*xi* VTG, or use a stand-alone VTG with the RGB 203 R*xi*. To use a stand-alone VTG, unplug the input and output devices' and the interface's power cords, replace the video source with a VTG, then reconnect power cords to restore AC power.
6. Call the Extron S³ Sales & Technical Support Hotline if needed.

If the image is not displayed correctly

1. If the output image looks too green, the sync on green (SOG) DIP switch (switch 2) may be set to On (up), and the display device may not be configured to handle SOG signals. Set the switch to Off (down).
2. If the picture bends or flags at the top of the screen, set the serration pulse DIP switch (switch 3) to Off (down).
3. For a display device that experiences intermittent glitches, try turning DDSP On (up) or Off (down) using DIP switch 1 on the rear panel.
4. If the picture "hangs off" the edges of the screen, adjust the centering controls (◂▸,▴▾).
5. If the edges of the image seem to exceed their boundaries or if thin lines and sharp edges look thick and fuzzy, try changing the Level/Boost or Peak Control settings. If the image is too bright, decrease the boost or peaking level.
6. If the image still does not display correctly, call the Extron S³ Sales & Technical Support Hotline.

If the interface does not respond to controls

1. **◂▸ knob and ▴▾ knob** — If you cannot adjust the horizontal centering, DDSP may be in use. Ensure that DIP switch 1 (DDSP) on the rear panel is Off (down).
2. **◂▸ knob, ▴▾ knob, and Input selection switch** — If you cannot shift between inputs or adjust the horizontal centering from the front panel, but you can operate the interface via a remote control, the interface may be in executive mode. Toggle executive mode off, see *Executive mode (front panel security lockout)* on page 2-19.
3. **(RGB 203 R*xi* VTG only) ◂▸ knob, ▴▾ knob, and Input selection switch** — If you cannot shift between inputs or adjust the horizontal centering on an RGB 203 R*xi* VTG, either on the front panel or via a remote control, the interface may be in VTG mode. Set the front panel 203/VTG toggle switch to the 203 position.

If the image is not correctly centered

If the picture from a new source computer does not seem correctly centered, the input position memory presets might require resetting. Reset the input position memories as follows:

1. Unplug the interface's AC power cord.
2. Hold down the input selector switch while you plug in the interface's AC power cord and wait approximately 5 seconds.
3. Select the appropriate input and adjust the horizontal and vertical centering.

If autoswitching does not work

Auto switch works for RGBHV and RGBS video inputs only. Auto switch does not work for RGsB video input.

NOTE *The selection of RGsB video output on rear panel DIP switch 2 has no effect on autoswitching.*

Chapter Three

Remote Control

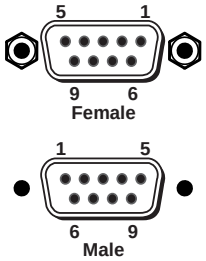
Simple Instruction Set Control

Command/Response Table for SIS Commands

Control Software for Windows

Contact Closure Remote Control

The interface's rear panel Remote connector (Figure 3-1) can be connected to the serial port output of a host device, such as a computer or control system or to a remote contact closure device. Remote communications with the switcher are via Extron's Simple Instruction Set, Extron's Windows-based control program, or pin-programmed in the case of a contact closure device.



Pin	RS-232	Contact closure	Function
1	—	In#1	Input #1
2	TX	—	Transmit data (-)
3	RX	—	Receive data (+)
4	—	In#2	Input #2
5	Gnd	Gnd	Signal ground
6	—	In#3	Input #3
7	—	—	—
8	—	—	—
9	—	—	—

Figure 3-1 — Remote connector pin assignments

The RS-232 protocol of the rear panel Remote connector is 9600 baud, 1 stop bit, no parity, and no flow control.

Simple Instruction Set Control

Host-to-interface communications

SIS commands consist of one or more characters per field. No special characters are required to begin or end a command sequence. When a command is valid, the interface executes the command and sends a response to the host device. All responses from the interface to the host end with a carriage return and a line feed (CR/LF = ↵), which signals the end of the response character string. A string is one or more characters.

Interface-initiated messages

When a local event such as a front panel or contact closure selection or adjustment takes place, the interface sends a message to the host. No response is required from the host. The interface-initiated messages are listed here (underlined).

(C) Copyright 2002, Extron Electronics, RGB 203 Rxi, Vx.xx ↵
The interface displays the copyright message when it first powers on. Vx.xx is the firmware version number.

RECONFIG ↵
When a change is made via a front panel control or another operation occurs that must be written to a new memory block, the interface sends the reconfiguration message. No response is required from the RS-232 host, but the host may request a new status listing via the request information command (I/i). See the command/response table in this chapter for details.

Chn X2 ↵

The input number has been changed or, for the RGB 203 R*xi* VTG, the VTG has been turned on or off.

Error responses

When the interface receives a valid SIS command, it executes the command and sends a response to the host device. If the interface is unable to execute the command because the command is invalid or it contains invalid parameters, it returns an error response to the host.

The error response codes and their descriptions are as follows:

E01 – Invalid input number (the number is too large or small; occurs when attempting to select VTG mode via RS-232)
E06 – Invalid input selection (occurs when selecting an input when the RGB 203 R*xi* VTG is set to VTG mode)
E10 – Invalid command
E13 – Invalid value (the number is out of range/too large)

Timeout

Pauses of 10 seconds or longer between command ASCII characters result in a timeout. The command operation is aborted with no other indication.

Using the command/response table

The command/response table is on page 3-5. Lower case letters are allowed in the command field only as indicated. Symbols are used throughout the table to represent variables in the command/response fields. Command and response examples are shown throughout the table. The ASCII to HEX conversion table, on the next page, is for use with the command/response table.

Symbol definitions

- ↵ = CR/LF (carriage return/line feed) (0x0D 0A)
- • = space
- [X1] = Input number — 1, 2, or 3
- [X2] = Shift control range — -127 to +127
- [X3] = Controller firmware version (listed to two decimal places, "*x.xx*")
- [X4] = *xxx.xx* — Frequency in Hz or kHz
- [X5] = Input selected — 1 - 3 (for input 1 through 3); 4 (VTG — RGB 203 R*xi* VTG only)
- [X6] = Part number

Command/response table for SIS commands

Command	ASCII Command (host to switcher)	Response (switcher to host)	Additional description
Input selection			
Select input	[X1] !	Chn [X1] ↵	Select input [X1].
Example:	3!	Chn3↵	Select input 3.
Horizontal shift			
Set horizontal shift	[X2] H	Hph [X2] ↵	Set horizontal shift value to [X2].
Example:	28H	Hph+028 ↵	Set horizontal shift value to +28.
Increment horizontal shift value	+H	Hph[X2] ↵	Previous horizontal shift value +1 (shift right).
Decrement horizontal shift value	-H	Hph[X2] ↵	Previous horizontal shift value -1 (shift left).
Vertical shift			
Set vertical shift	[X2] /	Vph [X2] ↵	Set vertical shift value to [X2].
Example:	-5/	Vph-005 ↵	Set horizontal shift value to -5.
Increment vertical shift value	+/	Vph[X2] ↵	Previous vertical shift value +1 (shift up).
Decrement vertical shift value	-/	Vph[X2] ↵	Previous vertical shift value -1 (shift down).
View, information, part number, and firmware requests			
Information request	I/i	Chn[X5]•Hph[X2]•Vph[X2]•Hrt[X4]•Vrt[X4] ↵	
Example		Chn3•Hph+028•Vph-005•Hrt48.400•Vrt60.000↵	Input 3; horizontal shift value +28; vertical shift value -5; horizontal rate 48.4 kHz; vertical rate 60 Hz.
Request for part number	N/n	[X6] ↵	
Example:	n	60-509-01 ↵	60-509-01 = RGB 203 Rxi VTG.
Query software version	Q/q	[X3] ↵	
Example:	q	1.23 ↵	Software version 1.23 (example only).

ASCII to HEX Conversion Table																
Space	20	!	21	"	22	#	23	$	24	%	25	&	26	'	27
(	28	)	29	*	2A	+	2B	,	2C	-	2D	.	2E	/	2F
0	30	1	31	2	32	3	33	4	34	5	35	6	36	7	37
8	38	9	39	:	3A	;	3B	<	3C	=	3D	>	3E	?	3F
@	40	A	41	B	42	C	43	D	44	E	45	F	46	G	47
H	48	I	49	J	4A	K	4B	L	4C	M	4D	N	4E	O	4F
P	50	Q	51	R	52	S	53	T	54	U	55	V	56	W	57
X	58	Y	59	Z	5A	[	5B	\	5C	]	5D	^	5E	_	5F
`	60	a	61	b	62	c	63	d	64	e	65	f	66	g	67
h	68	i	69	j	6A	k	6B	l	6C	m	6D	n	6E	o	6F
p	70	q	71	r	72	s	73	t	74	u	75	v	76	w	77
x	78	y	79	z	7A	{	7B	l	7C	}	7D	~	7E	DEL	7F

Control Software for Windows

The included RGB 201/203/580 Control Program, graphical control software for Windows, offers another way to control the interface. The control software is compatible with Windows 3.1, 3.11, 95/98, and above.

Installing the software

The control program is contained on a 3.5-inch diskette, and it can run from the floppy drive. However, it is more convenient to run the program from the hard drive.

To install the software onto the hard drive, run SETUP.EXE from the floppy disk, and follow the instructions that appear on the screen. The program requires approximately 1 MB (megabyte) of hard disk space.

By default the installation creates a C:\RGB201 directory, and it places two icons (RGB 201 Control Pgm and RGB 201 Help) into a group or folder named "Extron Electronics".

Using the software

To run the control program, follow these steps:

1. Double-click on the RGB 201 Control Pgm icon in the Extron Electronics group or folder, or on the Rgb201.exe icon in the C:\RGB201 directory. The Comm menu appears on the screen.

2. Click on the comm port that is connected to the interface's RS-232 port. The control software checks for the interface at that port and reads its configuration.

   The control program window (Figure 3-2) appears and displays current settings.

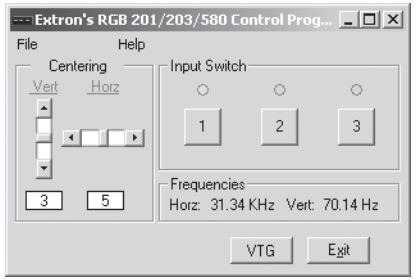


Figure 3-2 — RGB 203 Control program window

Using the help system

For information about program features, you can access the help program in any of the following ways:

- From the Extron Electronics program group, double-click on the RGB 201 Help icon.
- From within the Windows-based RGB 201/203/580 Control Program, click on the Help entry on the task bar.
- From within the Windows-based switcher control program, press the F1 key.

Contact Closure Remote Control

The rear panel Remote connector also provides a way to select an input to the interface using a remote contact closure device. Contact closure control uses pins on the Remote connector that are not used by the RS-232 interface. The contact closure pin assignments are shown in the table on page 3-2.

To select a different input number using a contact closure device, momentarily short the pin for the desired input number to logic ground (pin 5). To force one of the inputs to be always selected, leave the short to logic ground in place. The short overrides front panel input selections.

NOTE *Shorting the contact closure pin to override the front panel selection will not work if the interface is in auto-*

Appendix

Reference Information

Specifications

Included Parts

Optional Accessories

Cables

Specifications

Video

Routing	3 x 1 router
Gain	0.5V to 1.45V p-p
Bandwidth	300 MHz (-3dB)
Rise time	1.5 ns

Video input

Number/signal type	3 analog RGBHV, RGBS, RGsB, RsGsBs
Connectors	(3) 15-pin HD female
Nominal level	0.7V p-p for RGB
Minimum/maximum levels	Analog: 0.3V to 1.45V p-p with no offset at unity gain
Impedance	75 ohms
Horizontal frequency	15 kHz to 150 kHz
Vertical frequency	40 Hz to 140 Hz
Return loss	<-30dB @ 5 MHz
Maximum DC offset	4V

Video signal characteristics — RGB 203 Rxi VTG only

Dot clock	VGA 25.18 MHz, Mac 30.04 MHz, SVGA 65.04 MHz, SGI 107.4 MHz
Pixel clock accuracy	> 99.02%
Scan rate accuracy	> 99.03%
Frequency range	VGA ..... 31.475 kHz x 60 Hz SVGA ... 37.879 kHz x 60 Hz XGA ..... 48.392 kHz x 60 Hz SGI ..... 63.928 kHz x 60 Hz
Rise/fall time	2.5 ns / 2.0 ns, measured

Video output

Number/signal type	1 analog RGBHV, RGBS, RGsB
Connectors	6 BNC female
Nominal level	0.7V p-p for RGB
Minimum/maximum levels	0.3V to 1.30V p-p
Impedance	75 ohms
Return loss	-30dB @ 5 MHz
DC offset	±5mV maximum with input at 0 offset

Sync

Input type	RGBHV, RGBS, RGsB, RsGsBs	
Output type	RGBHV, RGBS, RGsB	
Input level	2V to 5.5V p-p with ±0.2VDC offset max.	
Output level	TTL: 4V to 5V p-p, unterminated	
Input impedance	510 ohms	
Output impedance	75 ohms	
Max. propagation delay	85 ns	
Max. rise/fall time	2 ns	
Polarity	RGBHV	tracks polarity (or force negative sync via internal jumper)
	RGBS, RGsB	negative

Audio

Routing	2 x 1 stereo router
Gain	Unbalanced output: 0dB; balanced output: +6dB
Frequency response	20 Hz to 20 kHz, ±0.05dB
THD + Noise	0.03% @ 1 kHz, 0.3% @ 20 kHz at nominal level
S/N	>90dB at rated maximum output (17dBu), balanced
Crosstalk	<-90dB @ 1 kHz, fully loaded
Stereo channel separation	>90dB @ 1 kHz to 20 kHz

Audio input

Number/signal type	2 PC level stereo, unbalanced
Connectors	(2) 3.5 mm stereo jacks (female) (2 channel); tip (L), ring (R), sleeve (ground)
Impedance	>10 kohms, unbalanced, DC coupled
Nominal level	-10dBV (316mVrms)
Maximum level	+8.5dBu, (balanced or unbalanced) at 1%THD+N

Audio output

Number/signal type	1 buffered stereo (2 channel) or mono, balanced/unbalanced
Connectors	(1) 3.5 mm, captive screw connector, 5-pole
Impedance	50 ohms unbalanced, 100 ohms balanced
Gain error	±0.1dB channel to channel

Maximum level (Hi-Z) ..... >+14dBu, balanced at stated %THD+N
Maximum level (600 ohm) ..... >+8.5dBm, balanced at stated %THD+N

NOTE *0dBu = 0.775 volts (RMS).*

Control/remote — interface

Serial control port ..... RS-232, 9-pin female D connector (also used for contact closure)
Baud rate and protocol ..... 9600, 8-bit, 1 stop bit, no parity
Serial control pin configuration .. 2 = TX, 3 = RX, 5 = GND
Contact closure ..... (1) 9-pin female D connector (also used for RS-232)
Contact closure pin configuration . 1 = input #1, 4 = input #2, 5 = GND 6 = input #3
Program control ..... Extron's control program for Windows®
Extron's Simple Instruction Set™ – SIS™

General

Input power ..... 100VAC to 240VAC, 50/60 Hz, 18 watts, internal, autoswitchable
Temperature/humidity ..... Storage -40° to +158°F (-40° to +70°C) / 10% to 90%, non-condensing
Operating +32° to +113°F (0° to +45°C) / 10% to 90%, non-condensing
Rack mount ..... Yes, with an optional rack shelf (part #60-190-01)
Furniture mount ..... Yes, with an optional under-desk mounting kit (part #70-077-01) or through-desk mounting kit (part #70-077-02)
Enclosure type ..... Metal, vented
Enclosure dimensions ..... 1.75" H x 8.75" W x 8.0" D (1U high, half rack width)
4.4 cm H x 22.2 cm W x 20.3 cm D
with rear BNCs ..... D = 8.4" (21.3 cm)
(Depth excludes knobs.)
Product weight ..... RGB 203 Rxi ..... 2.2 lbs (1.0 kg)
RGB 203 Rxi VTG .... 2.3 lbs (1.0 kg)
Shipping weight ..... 5 lbs (2.3 kg)
Vibration ..... ISTA/NSTA 1A in carton (International Safe Transit Association)
Listings ..... UL, CUL
Compliances ..... CE, FCC Class A, VCCI, AS/NZS, ICES

MTBF ..... 30,000 hours
Warranty ..... 3 years parts and labor

NOTE *Specifications are subject to change without notice.*

Included Parts

These items are included in each order for a RGB 203 R*xi* or an RGB 203 R*xi* VTG:

Included parts	Part number
RGB 203 R*xi*/RGB 203 R*xi* VTG	60-508-01/60-509-01
3.5 mm, 5-pole captive screw connector	10-319-10
RGB 203 R*xi*/202 R*xi* VTG User's Manual	
Rubber feet	
IEC power cord	
Windows-based control software	
Tweeker	

Optional Accessories

Accessories	Part number
Under-desk mounting bracket kit	70-077-01
Through-desk mounting bracket kit	70-077-02
1U rack shelf	60-190-01
3.5 mm stereo plug	10-306-01
Installation cable (bulk 14-conductor, non-plenum)	22-120-02
Installation cable (bulk 17-conductor, plenum)	22-111-03

Cables

Adapter cables with audio	Part number
VGA M-M 3' MHRA (molded) (0.9 m)	26-490-01
VGA M-M 6' MHRA (molded) (1.8 m)	26-490-02
VGA M-M 12' MHRA (molded) (4.6 m)	26-490-03
VGA M-M 25' MHRA (molded) (7.6 m)	26-490-04
VGA M-M 35' MHRA (molded) (10.7 m)	26-490-06

Adapter cables with audio (cont'd)	Part number
VGA M-M 50′ MHRA (molded) (15.25 m)	26-490-05
VGA M-M 3′ 90 HRA (0.9 m)	26-510-01
VGA M-M 6′ 90 HRA (1.8 m)	26-510-02
VGA M-M 12′ 90 HRA (4.6 m)	26-510-03
VGA M-M 3′ 90 UHRA (0.9 m)	26-510-21
VGA M-M 6′ 90 UHRA (1.8 m)	26-510-22
VGA M-M 12′ 90 UHRA (4.6 m)	26-510-23
VGA M-F 3′ micro HRA (0.9 m)	26-565-01
VGA M-F 6′ micro HRA (1.8 m)	26-565-02
VGA M-F 12′ micro HRA (4.6 m)	26-565-03
VGA M-F 25′ micro HRA (7.6 m)	26-565-04
VGA M-M 3′ micro HRA (0.9 m)	26-566-01
VGA M-M 6′ micro HRA (1.8 m)	26-566-02
VGA M-M 12′ micro HRA (4.6 m)	26-566-03
VGA M-M 25′ micro HRA (7.6 m)	26-566-04
Mac adapter 15-HDM kit with audio	70-156-01
13W3 adapter 15-HDM kit with audio	70-157-01

BNC cables	Part number
BNC-5 3′ HR	26-260-15
BNC-5 6′ HR	26-260-01
BNC-5 12′ HR	26-260-02
BNC-5 25′ HR	26-260-03
BNC-5 50′ HR	26-260-04
BNC-5 75′ HR	26-260-16
BNC-5 100′ HR	26-260-05
BNC-5 3′ HRP	26-378-01
BNC-5 6′ HRP	26-378-02
BNC-5 12′ HRP	26-378-03
BNC-5 25′ HRP	26-378-04
BNC-5 50′ HRP	26-378-05
BNC-5 75′ HRP	26-378-06
BNC-5 100′ HRP	26-378-07